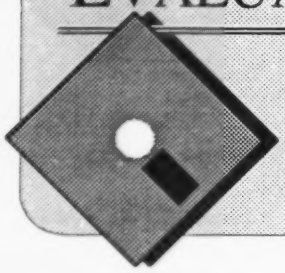
EVALUATIONS:MICROWARE



Instructional Materials Guide

Provincial Educational Media Centre
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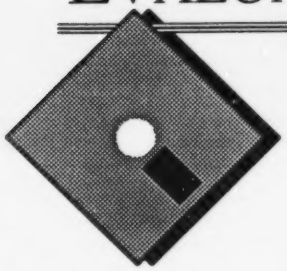

Instructional Materials Guide

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This guide and evaluation form have been revised by the coordinators of the Evaluations:Microware project for the Provincial Educational Media Centre, British Columbia Ministry of Education.

Portions of this guide and related evaluation instruments were originally developed by the Northwest Regional Educational Laboratory's Computer Technology Program with the assistance of the Research on Evaluation Program of NWREL, and with funds from the National Institute of Education.

INTRODUCTION

Purpose

Except in instructional situations where student programming is the primary activity, microcomputers can be used to assist the instructional process effectively, but only to the extent that quality software is available.

This Evaluator's Guide and Form has been developed to provide evaluative information to aid teachers and other educators in evaluating educational software and courseware.

The guide was originally designed to be used by school personnel who were participating in the courseware evaluation process of MicroSIFT and has been revised and adapted by the Provincial Educational Media Centre (PEMC) for use in B.C. with the Evaluations: Microware project. In addition, it has been found useful for individual teachers or others who wish to evaluate courseware before purchasing, and as a supplement to pre-service and in-service courses concerned with the development or use of computer-based applications.

Process

The form and guide are used in a process which involves practicing teacher evaluators, publishers/suppliers of microware, and PEMC. PEMC solicits materials from publishers on behalf of teachers who conduct an evaluation in the classroom using this guide and the accompanying form. The programs are then re-evaluated by the PEMC office before the package is returned to the publisher/ supplier along with a copy of the evaluation. The evaluative information is then summarized and published in one of the nine issues of Evaluations: Microware.

Each summary consists of a description of the product, an evaluative checklist of characterisitics, a statement of its strengths and weaknesses, a quality rating, and a purchasing recommendation. This information is distributed to educators in B.C. as well as two educational databases: The Council of Ministers of Education, Canada (CMEC) database for educational software and the Educational Software Evaluation Consortium database in the United States.

DEFINITION OF TERMS

In the field of microcomputers and education, terminology can easily be misinterpreted. So that everyone using this guide and form will interpret words in the same way, a brief glossary is provided on the following pages. Each definition conforms to some standard use of the term but is not necessarily a composite of all uses nor the most common use.

Instruction-Related Terminology

Drill and Practice Programs which enable students to drill and practice skills or concepts previously taught until they achieve mastery.

Enrichment Programs and materials which provide learning experiences that extend beyond the core curriculum.

Game Programs which encourage the development of content skills and concepts or problem solving skills by encouraging competition in a "gaming" environment.

Lab Interface A package which consists of a set of programs on disk, a user's manual and additional hardware which allows the computer to interface with other equipment such as temperature probes, light meters, music synthesizers, etc. Information may then be transferred to and from the computer via this interface.

Learning Managment Programs which diagnose a student's level of achievment, assign the student to an entry level, move the student forward or backward based on his/her success, and store information on the student's progress.

Problem Solving Programs which require students to use problem sovling skills to solve specific discipline-oriented problems.

Record Keeping Utility which stores student scores for teacher retrieval.

Remediation Programs and materials which review, reteach or provide additional drill on skills and concepts not mastered.

Simulation Programs that serve as models of situations in which there are time, space or equipment limitations, the real experience is too dangerous, or practice in problem solving/decision making is desirable before exposure to the real life situation.

Standard Instruction Programs and materials which relate to concepts included in the core curriculum.

Standard Instruction: Supplemental Programs and materials which may be supplemental to the core curriculum.

Tutorial Programs in which the computer acts as a teacher: introducing new concepts, evaluating student responses, providing exercises and tests, and branching to remediation and enrichment based on the student's success.

General Terminology

CD-ROM Compact Disc Read Only Memory: an optical storage medium using laser technology to encode large amounts of digital information on a compact disc. This information can be read but cannot be erased or modified.

Content Facts, terms, ideas, concepts, principles, theories and constructs which make up the subject matter of an instructional package.

Courseware Software and printed materials which support instruction in a complete course of study or a definable subset of a course. Using this definition, even a 30-minute student activity aimed at one objective may be considered courseware.

DOS Disk Operating System: an operating system which includes the capability of controlling and coordinating the functions of a disk drive within a computer system.

Graphics Images displayed on a video screen or printer which are generated by a computer program.

Hardware Equipment, including computers, disk drives, cassette players, cables, monitors.

Materials Books, folders, envelopes, work sheets and similar items. "User Support Materials" are items which support the activity of a person using a computer program.

Microcomputer A computer system, based on a microprocessor, including peripheral hardware such as disk drive, monitor, and a typewriter-like keyboard.

Operating System A program or set of programs which controls and coordinates the operation of the components of a computer system, e.g. multitasking or networking operating systems.

Package One or more computer programs with related print and supplementary materials.

Program A sequence of instructions that tells a computer how to perform a particular task or sequence of tasks. Programs are usually written in BASIC, Pascal, assembler or other programming language.

ROM Read Only Memory: a semiconductor memory that contains programs, instructions or data that cannot be erased by overwriting or loss of power.

RAM Random Access Memory: a semiconductor which constitutes the main memory of a microcomputer and which is volatile. That is, the use of the computer may store programs or data in RAM, and in so doing erases information previously stored there.

Software Computer programs, including application programs, operating systems, and languages.

Storage Medium The physical medium on which data is stored such as magnetic disk, tape cassette, ROM cartridge, or laser disc.

Videodisc A medium for storing digital and visual information on a disc which is read by laser and provides random access to this information.

DESCRIPTION

Before a package can be evaluated, you will need some factual information about it. For example, does it have all the components necessary to make it an instructionally useful package? Indeed, determining the existence of needed components is itself an evaluation.

The "Description" section identifies the information necessary for evaluation and use of a package. In some cases, a list of components is included. In a complete package, all the information should be readily available in the program and support materials.

Completing the form should be a straightforward task. If, however, some information is not provided in the package, you may be able to infer some of it by a trial use of the package.

Each of the sections on the "Description" part of the form are discussed below.

Title The full name of the program.

Version A version number, usually found on the diskette. (e.g., Version 1.4)

Copyright The date of publication.

Series Title If a program is part of a series, the title of the series should be recorded in this field.

Author The person(s) who designed and wrote the program. If there are three or more authors, list the first author followed by "et al."

Publisher Enter the name, address and telephone number of the company who published the package.

Cost This should be expressed in Canadian funds if that is the way the price has been shown. If the package price has been expressed in American dollars, the code "US" should follow the dollar figure.

Supplier The name of the company who supplied the program to PEMC for the purpose of the evaluation. Whenever possible this information will be supplied by PEMC.

ISBN	Not all packages have an ISBN.	The International Standard Book Number is entered in this field.
Subject Area	(refer to the appendix for a complete lisiting).	A general area such as Language Arts, Mathematics, Science, etc.
Grade/Ability Level	stated level is inappropriate, please indicate the "stated" level and the appropriate level.	The grade level, grade range, or other ability level indicator for which the package is intended. If
Specific Topic	(refer to the appendix for a complete listing).	A subset of the subject area, such as spelling or writing.
Language		Indicate the language of the program by checking the correct box: English or French.
Medium of Transfer		Please indicate the medium of transfer, the disk size and the appropriate DOS if necessary.
Required Hardware	such as a mouse, joystick, koala pad, circuit card etc. If necessary, identify any other *software* needed to run the program but not included with the package (e.g., authoring language).	Identify the type of hardware required for the purpose of the evaluation. Please include the computer model, RAM amount, number of drives required, whether a printer is optional or required, as well as any other peripherals that are needed
Versions Available		List any other computer formats for which the program is available, but not being evaluated at this time.
Options	the program: site license, network support, and/or classroom packs.	Please check the appropriate box if the publisher has indicated that the following options are available for

Package Components

Indicate if the package contains a user's manual and/or teacher's guide and include the number of pages in each document. Note the number of program disks in the package, and whether or not back-up disks are included with the package or if permission has been granted to copy. Additional components such as sensory probes, etc., should also be listed.

Instructional Purpose, Instructional Technique and Teacher Options

It is preferable to have these stated in the package; however, if they are not explicitly stated, they may be inferred. (Please refer to definitions on page 2).

Documentation and Supplementary Materials

Check all the items that are included in the documentation. Please list any other supplemetary materials included but not noted on the form. Check to see if warranty and replacement policy information is included with the package.

Instructional Objectives

List the purpose, goals or objectives the package is intended to achieve. Please state in terms of expected learner outcomes. It is preferable to have these stated in the package, however if they are not included they should be inferred.

Examples:
- recall of previously learned facts,
- application of specific skill(s)
- abstraction beyond concrete level
- transfer of learning (e.g., to real-life situations)
- critical thinking skills

Instructional Prerequisites

Describe the experiences, skills, concepts, understandings, maturity and ability levels (including reading ability) which the intended user should possess for successful use of this package.

Abstract of Content

This information should be available in the material provided by the publisher of the package. However, you may wish to add comments if the description is incomplete or inaccurate. Include a description of the content, program structure and user's role.

Describe Documentation

In this space please include any descriptive information pertinent to the documentation but not included on the first page of the form. Note if the software is the basic program component or a supplement to a larger educational package.

If possible, include the number of student worksheets, the type of information found in the appendix, length of warranty, dimensions of printed material, and method of binding.

EVALUATION

The Evaluation section of the form is designed to be used after the descriptive section of the form is complete. The rating of the 22 items in the centrefold of the form should be the starting point of the evaluation. All of the evaluative criteria are described in this manual.

Your judgments should be based on a thorough investigation of the program and support materials in the package. It is intended that where the term *package* is used, that all components are considered in making the evaluation.

Indicate the grade level and any other pertinent information or special characteristics about the students who used this package during the evaluation. (e.g., split grade levels, predominantly high or low achievers, etc.)

Student Use

Items 1 through 21 are to be indicated on the scale provided. It is assumed that, in most cases, you will check agree or disagree. Only when the exception occurs would it be necessary to mark Strongly Agree or Strongly Disagree. It is anticipated that in some cases a given item may be meaningless for a package being evaluated and so Not applicable should be checked. The description of each of the items on the following pages are intended to be suggestions for consideration in arriving at a judgement on the item. They are not necessarily in order of importance and are not exhaustive of possible considerations.

Checklist

A. Content

1. The content is accurate

Possible problems in content accuracy include:
- outdated information or instructional approach
- factual errors
- invalid model used in a simulation
- oversimplified model or examples
- improper use of statistics
- inaccurate graphs or displays
- computation, grammar, syntactical or spelling errors

2. The content has educational value

Any decision on this item will be highly subjective. Some considerations leading to a positive judgement might include:
- The content and objectives are addressed in the school curricula.
- The knowledge and skills involved are applicable in some aspect of life.
- You can envision an instructional situation in which the package would be useful.
- Use of the package enables you to learn something about the nature or needs of the student using it.
- The content of the package is relevant to the subject field.

3. The content is free of bias and presents a balanced social view

- Social considerations may include language usage, ethnic references, social role portrayal, references to belief systems, references to violence, sexual references, age portrayals, references to social class and any other concerns. Consider the tone, extent of the reference, setting, frequency of occurrence and any omissions.
  e.g., slang or dialect is excessive or inappropriate.
  e.g., beliefs of one political group are advocated over others.

- Social considerations should emphasize positive characteristics.
- Regional bias may mean that there is an absence of Canadian data where relevant, or an absence of metricated content where appropriate.

4. The program can be easily integrated into the B.C. curriculum

When evaluating a program please consider the content in terms of the B. C. curriculum. As many of the programs acquired for the purpose of evaluation are developed in the United States, the content is not always applicable. This is especially important in the areas of Social Studies and History. Although many factors (cost, hardware, etc.) may influence whether or not a product is suitable, it is only the content that we are interested in at this point.

B. Instructional Quality

5. The purpose of the package is well defined

Purpose, goals and objectives may be in the program or in the support materials. The identification of instructional objectives is import ant to the transferability and use of an instructional package.

- Objectives should be explicit, rather than inferred.
- Objective statements should be clear; i.e. unambiguous and without multiple meanings, succinct, free of jargon.

- Objective statements should be stated in terms of expected student behaviours.

The package should include both general and specific statements of purpose. That is, the overall purpose of the package should be concisely stated, with specific objectives stated for specific components

Courseware can be evaluated in much the same way that other instruction is evaluated – beginning with the instructional objectives. Based on these objectives, the student using the instructional package should learn what the material sets out to teach rather than merely being engaged in the process. The most effective way to substantiate this aspect of instructional quality is through a sample run of the program, preferably with a student from the suggested target audience. If such a learner is not available, the evaluator should make a judgement as to how well the package would actually accomplish its objectives when used by a student of the appropriate maturity and ability, based on the evaluator's experience with students of that type.

6. The package achieves its defined purpose

The focus of this item is on how the terms, facts, concepts and principles of the subject matter are presented rather than on the content itself.

- The information is well organized.
- The structure of the presentation is evident to the user.

- Definitions and explanations are available when necessary.
- The progression of the presentation is smooth, logical and well identified.
- Examples, counter-examples and illustrations are used where possible.
- The examples are relevant to the point of instruction.

7. Presentation of content is clear and logical

- The means of response is appropriate to the target audience. (i.e., multiple choice, manipulating graphics, single keystroke, etc.)
- The readability of the program and support materials is consistent with the expected ability level of the audience. Vocabulary, phrasing and sentence length should be considered here.
- Examples and graphic illustrations are suitable for the maturity of the student.

- The time required for typical student use does not exceed the attention span of the target audience.
- The size of steps are logical and well suited to the ability level of the student.
- There are multiple levels of instruction, with diagnostic and reinforcement routines, for individual differences in the target audience.
  e.g., The program automatically branches to remediation subroutines based on the student's response.

8. The level of difficulty is appropriate for the target audience

9. Graphics/Colour/Sound are used for appropriate instructional reasons	• Graphics, sound and colour enhance rather than detract from the instructional process • Use of sound does not disturb others in a classroom environment, and may be optionally turned on or off by the user. • Graphics, sound and colour focus attention on important content areas.	• Good message design principles are used in order to place emphasis on important concepts. (Special emphasis on words; i.e., boxes, block letters, reverse field.) • Visual and auditory effects stimulate student interest.
10. Use of the package is motivational	• A student is left with a desire to use the package again, or to pursue the topic in other ways. • A student is left with a positive attitude about the experience.	
11. Student interaction is appropriate and/or varied	• The learner is involved in an active, rather than passive manner in the instruction. e.g., The student has control over as many input variables as the program permits, such as the level of difficulty, or the number of questions to answer. • The package provides opportunities to answer open-ended questions that have no "right" or "wrong" answers, and gives the student evaluative criteria to judge his/her own responses. • The program uses a variety of questioning techniques such as true/false, multiple choice,	matching and fill-in-the-blank. • Questions are randomized so the student cannot predict what the next question is going to be. • The package suggests areas of further exploration or other activity. • The student is challenged to change an underlying model or design an alternative model. • The program goes beyond a typical text book approach in presenting the information. • The student is required to do more than just read text on the screen and press the return key or space bar.
12. Feedback on student responses is effectively employed	• Feedback is relevant to the students' responses. • Feedback is non-threatening, yet corrective when necessary. • Feedback is timely; i.e., given with appropriate frequency and given immediately after a response. • Feedback remediates (give cues, hints, and explanations).	• There is quantitative feedback when valuable. (e.g., The program indicates the number and percentage of problems correct out of the number of problems attempted. • The feedback tells *why* the response was incorrect (e.g., "You should have spelled the name correctly" or "Use no punctuation").

- The judgement of student responses properly assesses the concept being taught, not merely its form. (e.g., Is word order more important than the content of the reponse?)

- The program adapts to the learner by adjusting the difficulty level of content.
- The quantitative feedback is appropriate for the target audience.

- The student can vary the time allowed for solving problems, adjusting the pace as he/she deems necessary.
- Student has control over the rate of presentation of display material so that he/she can read and absorb the information at his/her own rate.
- The program does not lock the student into a linear instructional sequence.

- The program allows the student to begin, continue and end at a level appropriate to his/her past achievements.
- The program has a provision for review of instructions initiated by the user.
- The program defines "function" keys for learner options such as "Help", "Hint", "Dictionary", "Escape".

13. The learner controls the rate and sequence of presentation and review

C. Technical Design

In this item, you are assessing the completeness of the package, in terms of its support for the teachers and students in the intended pattern of use, and reasonable optional uses. Many different types of information may be included in the printed material accompanying the program. The components of good user support materials identified here can be packaged in may ways.

- Student materials:
  Sufficient materials for a variety of student activites should be provided.
  - pre-instruction activities relating to the package
  - a guide to use from the package.
  - follow-up activities to reinforce the instruction
  - worksheets

- Teacher's Information
  - a description of the instructional activities to take place
  - suggestions for classroom logistics in a variety of hardware situations (single or multiple machines, hardware not in classroom, etc.)
  - a rationale for computer use
  - necessary prerequisite skills
  - teacher directed pre and post-instructional activities

- Resource Information
  - bibliography of resources and references related to the content domain
  - sample run of the program
  - possibilities for program modification
  - a description of the model used in simulations

14. The user support materials are comprehensive

	• Technical Documentation - detailed explanation of how the program and package operates - program code listing - explanations of user-definable options to adapt the program for different applications - explanation of the software/ hardware interface or any other extraordinary features of the program.	- flowchart or other diagrams of general logic of individual program and package - interpretation of error messages • Containers - folder, binders, pockets for storing printed materials, disk, cassettes or other components - boxes or other containers for organizing and storing the entire package.
15. The user support materials are effective	• The appearance of the materials is attractive. • The quality of the paper or binding is appropriate to its intended use and expected life. • The printed text is clear, readable and attractive. • Pictures, diagrams and graphs are appropriate and readable. • The text, captions, labels, etc. are thoroughly edited, and free of errors in grammar, spelling and punctuation. • The packaging of the materials is suitable for the intended use; e.g., – student worksheet masters	are indented for reproduction and are "loose leaf" for easy reproduction. – teacher support materials can be separated from student materials. • The software storage area is easily accessible, yet protected from random injury expected in mailing, dropping, etc. • The entire package may be stored as a unit in standard storage facilities (office shelves, cabinets, etc.) • Materials are easily used in tablespace typically available near a microcomputer station.
16. Screen displays are effective	• Good message design principles are incorporated into the visual display. • Graphic displays are simple, and present appropriate amounts of information. e.g., There is adequate spacing on the screen or in printed materials for clarity. • Screen and printed displays make effective use of open space.	• Narrative is not ambiguous. • Directions are not too lengthy or "wordy." • The user is given adequate time to read and absorb the information given in the displays. • Text is free from spelling and punctuation errors. • Character sets employed are appropriate for the intended audience: i.e., Text is clear and legible.

- Graphics are not too repetitive or slow in presentation.
- Screen displays are not filled with pages of text
- The text position is consistent and/or predictable (i.e., the student does not have to search for the information).
- Graphics are appropriately mixed with text material to give variety to the presentation.
- Transitions from display to display on the screen are smooth and unobtrusive.
- Scrolling is used appropriately. Only pertinent information is retained on the screen.
- Graphics are not distracting to the user.

- The program has enough internal documentation to permit ease of use even without paper documentation.
- Formats and protocols for user-computer communication are consistently applied and logical. e.g., "Press Space Bar to Continue" instruction is used consistently.
- Directions are accompanied by useful examples where appropriate.
- Help functions are provided and accessible at likely points of need.
- Messages advise the user if the program pauses temporarily (e.g., loading a graphic)
- Traps are used to catch potential errors of any kind. (e.g., The program handles unanticipated responses.)
- Instructions and error messages are clear and unambiguous. They give the user clear directions as to what he/she must do to effectively use the program.
- The program responds to input as the directions indicate.
- The user can easily exit the program, return to menus, or move to another section with program-described procedures.
- The program accurately evaluates student input; i.e., it does not misinterpret student response as incorrect when it is in fact correct.
- Computer operation does not interfere with concentration on the activity.
- The program can be used with a minimum of computer competencies.
- The complexity of the program does not interfere with ease of use.
- The user is informed of the purpose of the function keys he/she will use in the course of the program.
- There is the necessary cueing for function key usage.
- Those function keys referred to in the program are available on the hardware.
- The use of function keys does not necessitate re-input of user responses. (e.g., A "help" key option or submenu is provided.)

17. Intended users can easily and independently operate the program

18. Teachers can easily employ the package

Not only should the program be easily used by the students, but it should be equally employable by the teachers. Many of the same considerations as in item 17 can be applied here, but also:

- The program can be used by a person having a minimum of computer competencies.
- The program requires a minimal amount of equipment manipulation by the teachers.
- Software modifications or unusual manipulations of disk are not required to use the program.
- The package is easily adaptable to a variety of classroom learning environments, including placement of hardware inside or outside the classroom.
- Error handling and identification are sufficiently detailed so the teacher can easily help a student.
- Students require a minimum amount of teacher supervision while using the program.
- If desirable, a teacher can control pace and difficulty level.

19. The program appropriately uses relevant computer capabilities, and provides students with a learning experience that cannot be duplicated

The success of the computer as a means for instruction is due to those capabilities inherent in the technology. Computer software should take full advantage of these unique aspects of the computer.

- The rationale for computer use has been carefully considered, i.e., the application is well suited to computer use and not one that can be handled more appropriately by other means.
- Course management or computer collection and organization of data on instruction is available.
  e.g., The information about the student's performance is stored for retrieval at a later time.
- The computer is used in a dynamic, interactive way.
  e.g., The computer makes decisions based on student performance according to the teaching strategies inherent to the program.
- The computer makes effective use of alternative input devices.
  e.g., printers, light pens, paddle controllers, joysticks, etc.
- The computer is used to simulate activities that are too difficult, dangerous, or expensive to demonstrate in reality.
- The computer is used so that students are actively involved in a "hands-on" manner rather than only passively observing.
- The computer responds to natural student input such as Y for "yes" or N for "no" rather than "1 = yes, 2 = no".

- The program will consistenly run under all normal conditions. No special precautions, such as clearing memory, are required for effective program execution.
- The program will consistently load into the computer without undue complexity.
- The program is free of programming and operation errors ('bug-free').
- Error trapping is sufficient to prevent the program from freezing or "hanging".

20. The program is reliable in normal use

D. Value

Decisions in this category will be highly subjective. Consider the cost of the program in relation to:

- other programs which are similar in design and content
- the program's effectiveness as an instructional tool.
  i.e., the program presents the information as effectively or more effectively than other means of instruction.
- the amount of time the student spends interacting with the program.
  e.g., The program only addresses one small unit of instruction and cannot be modified by the teacher.
- the amount of time that must be invested by the teacher to learn the program.
  e.g., The program is difficult to learn and integrate into the class.
- the availability of multiple copies through classroom packs, network version, or site license.

21. The cost of the package is reasonable for the instructional value

A. Rating:

After completing items 1 through 21, you should be able to assign a number from 1 (unacceptable) to 5 (exemplary) as an indication of the quality of the package in each division.

22. Evaluator's Rating Recommendation

B. Recommendation:

Having concluded a review of the instructional objectives, prerequisite activities, content and structure, and rating the various characteristics of content, instruction and technical quality, you are then ready to make a recommendation as to the use of the package.

You have three options from which to choose to represent your estimation of the program's usefulness. These options correspond to section 22 of the Evaluation Form.

- *Recommend Program*
  I would use or recommend use of this program/package.
- *Recommend With Changes*
  I would use or recommend use of this program/package only if certain changes were made.
- *Do Not Recommend*
  I would not use this program/package.

23. Describe Major Strengths of the Package

24. Describe Major Weaknesses of the Package

In completing these items the evaluator should refer to Content, Instructional and Technical Quality ratings (items 1 through 22). These ratings, along with any notes or comments that the evaluator made, should serve as the basis for specifying the program's strengths and weaknesses. Following are some example comments:

Content Strengths

"The laboratory simulation was accurate and could be used in place of the real laboratory situation."
"The instructional objectives are stated and are very specific as to expected performance behaviour."

Content Weaknesses

" Some equations were graphed incorrectly on the monitor."
"The recommended audience age is too young for program content."

Instructional Strengths

"The user has control over many of the variables affecting his/her instruction."
"The simulation adequately considers all of the variables related to the problem."

Instructional Weaknesses

"The program does not allow students to generate their own answers - only make a choice of four options."
"The student only watches the program. There is no active participation in the courseware."

Technical Strengths

"The directions are very clearly stated, giving examples when necessary."
"The documentation is thorough and comprehensive."

Technical Weaknesses

"The computer is used as nothing more than an electronic textbook. None of the computer's unique interactive characteristics are used."
"The documentation includes only a description of the program's content. No objectives or prerequisites are mentioned."

25. Describe the potential use of the package in classroom settings, making reference to the B.C. Curriculum

The list of items 1-22 in the centerfold of the evaluation form should be completed before this item. A recommendation for use with or without changes should be accompanied with a description in this space of the possible use you envision for the package in specific classroom settings, making reference to the B. C. curriculum where appropriate. Examples of the type of comments that might be included are:

e.g., "The package can be used to introduce Mole Stoichiometry in Grade 11 Chemistry." "I would not recommend using this package in the classroom. It is difficult and time-consuming for the teacher/student to use, and is of little instructional value."

"The courseware can be used to reinforce addition with regrouping at the Grade 2 or 3 level." "Although this package is not applicable in a classroom situation it could be used in a 'contest' form to see which team can devise the best strategy for solving the problem."

As part of the evaluation process, it is recommended that students have the opportunity to work with the program. Often their reaction and comments about a program will be quite different from a teacher's. This space has been provided so that those comments may be recorded.

26. Student Comments and Reactions

By the signing of this document you are confirming that no attempt was made to copy or modify the program or accompanying documentation. The loan of the program is for the purpose of completing an evaluation only and under no circumstances may a copy be made.

PEMC relies on your integrity as an evaluator to adhere to this responsiblilty. The Evaluation: Microware project has continued because of the cooperation between publishers/suppliers and teacher evaluators.

Evaluator's Signature

Appendix

Subject - Topic Abbreviations

AT Art

BE Business Education
- AC Accounting
- EC Economics
- TY Typing
- WP Word Processing

CE Career/College Guidance

CS Computers
- CL Computer Awareness
- CP Computer Programming/Science

FL Foreign Language
- GN German
- SA Spanish

FR French

HE Home Economics

HL Health
- NU Nutrition
- SE Safety Education

KB Keyboarding

LA Language Arts/English
- LI Literature (appreciation)
- RE Reading (instruction)
- SP Spelling
- WR Writing

LM Library Media Skills

MA Mathematics
- AD Advanced Mathematics
- AL Algebra
- AR Arithmetic
- GM Geometry/Measurement
- ST Statistics

MU Music

PE Physical Education/Sports

PR Preschool/Early Childhood

PS Problem Solving

SC Science
- AY Astronomy
- BL Biology
- CH Chemistry
- EE Ecology/Environmental Ed
- ES Earth Science
- GS General Science
- PH Physics
- SM Scientific Method

SN Special Needs/Handicapped

SS Social Studies
- EC Economics
- EE Environmental Ed
- GE Geography
- GO Government/Political Science
- HI History
- SO Sociology

UT Utilities
- AD Administration
- AU Authoring System
- CM Classroom Management
- DB Database
- GG Graphics Generator
- IM Instructional Materials Generator
- PL Peripherals
- RS Readability Scale
- SD Spreadsheet
- SH Shell/Mini Authoring
- SK Spelling Checker
- TC Telecommunications
- TE Test
- WP Word Processing

VE Vocational Education
- DR Drafting
- EL Electronics

Microware Evaluation Form - Instructional Materials

Description (Pages 4-5 in the Evaluator's Guide)

Package Title	Version No.	Copyright
Series Title	Author	
Publisher	Publisher's Tel. No.	
Publisher's Address		Cost
Supplier	ISBN	
Subject Area	Grade/Ability Level	
Specific Topic	Language ☐ English ☐ French	

MEDIUM OF TRANSFER

- ☐ DOS _____
- ☐ 5 1/4"Disk
- ☐ 3 1/2" Disk
- ☐ CD ROM
- ☐ Videodisc
- ☐ Other _____

REQUIRED HARDWARE

Computer _____

RAM required _____

Drives required ___1 ___2

Monitor ___BW___Colour

Printer ___ Req'd ___ Opt

Other Peripherals _____

Software required, but not included in package:

_____

VERSIONS AVAILABLE

Computer Models

_____

OPTIONS:

- ☐ Site License
- ☐ Network Support
- ☐ Classroom Pack

COMPONENTS

Pages

- ☐ User Manual _____
- ☐ Teacher's Guide _____

No. of program disks _____

Backup :

___ permitted ___ included

Additional hardware included:

_____

INSTRUCTIONAL PURPOSE (Page 6)

- ☐ Remediation
- ☐ Standard Instruction
- ☐ Standard Instruction: Supplemental
- ☐ Enrichment

INSTRUCTIONAL TECHNIQUE

- ☐ Drill and Practice
- ☐ Tutorial
- ☐ Game
- ☐ Simulation
- ☐ Lab Interface
- ☐ Problem Solving
- ☐ Other _____

_____

_____

TEACHER OPTIONS

- ☐ Learning Management
- ☐ Record Keeping
- ☐ Content Modification
- ☐ Other _____

_____

DOCUMENTATION AND SUPPLEMENTARY MATERIALS INCLUDE: (Check all that apply)

- ☐ Table of Contents
- ☐ Index
- ☐ Glossary
- ☐ Hardware Requirements
- ☐ Program Description
- ☐ Warranty & Replacement Information _____
- ☐ Suggested Grade/Ability Levels
- ☐ Prerequisite Skills or Activities
- ☐ Instructional Objectives
- ☐ Program Operating Instructions
- ☐ Sample Program Output
- ☐ Teacher's Information
- ☐ Student Worksheets
- ☐ Resource Reference Info.
- ☐ Suggested Classroom Use
- ☐ Relationship to Standard Textbooks
- ☐ Other _____

Description: *A factual reporting of program intents, operations and documentation. Not to include evaluative statements or writer's opinion*

Instructional Objectives (page 6)

Stated ☐

Inferred ☐

Instructional Prerequisites (page 6)

Stated ☐

Inferred ☐

Abstract of Content (page 6)

Documentation & Supplementary Materials: Additional Information (page 6)

Size _____ Method of Binding: ____ Glued ____ Spiral ____ 3-Ring ____ Stapled

Instructional Package

Evaluation

Indicate the grade level and any other pertinent information regarding the students who used this package _____

Rating: Check the square which best reflects your judgement.
Use the space following each item for comments

	STRONGLY AGREE	AGREE	DISAGREE	STRONGLY DISAGREE	NOT APPLICABLE		EVALUATOR'S GUIDE PAGE REFERENCE	
CONTENT						1. The content is accurate.	7	Comments
						2. The content has educational value.	7	
						3. The content is free of bias and presents a balanced social view.	8	
						4. Program can be easily integrated into the B.C. curriculum.	8	Comments
INSTRUCTIONAL QUALITY						5. The purpose of the package is well-defined.	8	
						6. The package achieves its defined purpose.	9	
						7. Presentation of content is clear and logical.	9	
						8. The level of difficulty is appropriate for the target audience.	9	
						9. Graphics/colour/sound are used for appropriate instructional reasons.	10	
						10. Use of the package is motivational.	10	
						11. Student interaction is appropriate and/or varied.	10	
						12. Feedback on student responses is effectively employed.	10	
						13. The learner controls the rate and sequence of presentation.	11	
TECHNICAL DESIGN						14. The user support materials are comprehensive.	11	Comments
						15. The user support materials are effective.	12	
						16. Screen displays are effective.	12	
						17. Intended users can easily and independently operate the program.	13	
						18. Teachers can easily employ the package.	14	
						19. Uses the computer's capabilities, & provides students with a learning experience that cannot be duplicated.	14	
						20. The program is reliable in normal use.	15	
						21. Cost of the package is reasonable for the instructional value.	15	

Content				
5	4	3	2	1
Instructional Characteristics				
5	4	3	2	1
Technical Characteristics				
5	4	3	2	1

22(a) Circle a number from 1 to 5 which represents your judgement of the quality of the package in each division. (Page 15)

5 = Exemplary **4** = Good **3** = Acceptable

2 = Poor **1** = Unacceptable

22(b) Check one only:

☐ I would use or recommend use of this package.

☐ I would use or recommend this package only if certain changes were made.

☐ I would not use or recommend this package.

23. Describe the major strengths of the package. (page 16)

24. Describe the major weaknesses of the package. (page 16)

25. Describe the potential use of the package in a classroom setting, making reference to the B.C. curriculum.

26. Student Comments and Reactions

Evaluator's Name (please print)

School

School Address

City Postal Code Phone

RETURN TO:
Evaluations: Microware
Provincial Educational
Media Centre
7351 Elmbridge Way,
Richmond, B.C.
V6X 1B8

I agree to allow the Provincial Educational Media Centre to list my name and address with Product Information related to this evaluation and confirm that no attempt was made to copy or modify the program or accompanying documentation.

Signature _____ Date _____

As an evaluator you may be contacted by the software producer. Please make a copy of the evaluation for your file so that you can provide constructive criticism of these programs and/or documentation.